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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 46087.3-2025

**Test for shop primers in relation to welding and allied
processes - Part 3: Thermal cutting
(English Translation)**

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 3 of GB/T 46087 "Shop Primer Welding and Related Process Tests". GB/T 46087 has been published as follows.

Part 2.

- Workshop primer welding and related process tests, Part 1: General requirements;
- Workshop primer welding and related process tests, Part 2: Welding performance;
- Workshop primer welding and related process tests, Part 3: Thermal cutting;
- Workshop primer welding and related process tests, Part 4: Emission of smoke and gas.

This document is modified to adopt ISO 17652-3:2003. Welding shop - Primer welding and related processes - Tests - Part 3: Thermal cutting.

The technical differences between this document and ISO 17652-3:2003, and the reasons therefor, are as follows.

- The scope has been changed to conform to the drafting rules of Chinese standards (see Chapter 1);
- The normative reference GB/T 46087.1 replaces ISO 17652-1:2003 (see Chapter 3); the normative reference...

GB/T 700 replaced EN10025, and the normative reference GB/T 8923.1 replaced ISO

8501-1:1988.

GB/T 13452.2, a normative reference, replaces ISO 2808 (see 4.1); JB/T 10045, a normative reference, replaces [the previous standard].

EN ISO 9013 (see 4.2) is adopted to suit my country's technical requirements.

---Fiber lasers have been added to the laser types (see 4.6) to adapt to the domestic technological environment.

The following editorial changes have been made to this document.

---The standard title has been changed to "Shop Primer Welding and Related Process Tests Part 3: Thermal Cutting";

---Appendix ZA of the international standard has been deleted.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed and is under the jurisdiction of the National Technical Committee on Welding Standardization (SAC/TC55).

Introduction

Shop primer, as a key protective layer in steel pretreatment, is widely used in steel structures, shipbuilding, and automobile manufacturing, and its performance directly affects...

It relates to the quality and safety of subsequent processes such as welding and cutting.

GB/T 46087 "Shop Primer Welding and Related Process Tests" aims to establish a complete evaluation system for shop primer processes, including shop primer...

The impact of paint on welding performance, thermal cutting efficiency, and fume emissions is divided into the following four parts.

---Part 1: General Requirements. The purpose is to specify the basic conditions, terminology definitions, environmental and safety requirements for testing, in order to provide a basis for subsequent testing.

Provide a unified framework.

---Part 2: Weldability. The purpose is to assess the effect of shop primer on weldability by evaluating the severity of weld porosity defects.

The impact.

---Part 3: Thermal Cutting. The purpose is to clarify the test method for the maximum thermal cutting speed of the shop primer, using standardized test pieces.

Preparation and cutting parameters were set, and the impact of the primer on cutting efficiency and process stability was evaluated.

---Part 4: Emissions of Smoke and Gases. The aim is to establish an evaluation system for the emission levels of smoke and harmful gases from the primer workshop.

This system provides technical support for reducing occupational health hazards and environmental pollution.

Workshop primer welding and related process tests Part 3: Thermal Cutting

1 Scope

This document specifies the test method for assessing the effect of the test shop primer on the maximum usable speed of thermal cutting, including the test procedure, result evaluation, and...

The report requires...

This document applies to the assessment of the impact of shop primer on the maximum usable speed of thermal cutting.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

GB/T 700 Carbon Structural Steel (GB/T 700-2006, ISO 630:1995, NEQ) GB/T 8923.1 Visual assessment of surface cleanliness of steel before coating - Part 1: Uncoated steel Rust grades and treatment grades of steel surfaces after complete removal of original coatings (GB/T 8923.1-2011, ISO 8501-1.

2007, IDT)

GB/T 13452.2 Determination of film thickness of paints and varnishes (GB/T 13452.2-2008, ISO 2808:2007, IDT) GB/T 46087.1 Shop primer tests for welding and related processes - Part 1: General requirements (GB/T 46087.1-2025) ISO 17652-1:2003, MOD) JB/T 10045 Specifications for Thermal Cutting Quality and Geometry

3 Terms and Definitions

The terms and definitions defined in GB/T 46087.1 apply to this document.

4.1 Specimen Preparation

The test specimens should be made of Q275 grade hot-rolled steel plate conforming to GB/T 700, with dimensions of 1000mm x 1000mm x 10mm.

All specimens in a test series should be taken from the same furnace number (same batch). The surface of the specimens should be smooth, flat and undamaged.

A test series should include.

---One specimen shot-blasted to SA2 grade according to GB/T 8923.1;

---One or more test pieces coated with the shop primer to be evaluated according to the supplier's recommended method;

---1 uncoated blank specimen.

The thickness of the shop primer should be uniform and consistent with the supplier's recommended requirements. Unless otherwise specified, test specimens should be tested at a surface temperature of 10°C to 40°C.

Cut the food after drying for at least 10 days under conditions of air humidity not lower than 50%. If other storage conditions are used, this should be recorded in the test report.